

ABSTRACT

A heat treatment process that will restore the mechanical properties of an aircraft engine article that includes a cast Inconel 718 portion welded to a wrought portion. The heat treatment process includes placing an article that includes the Inconel 718 cast portion into a heat treatment chamber, evacuating the chamber to a suitable atmosphere, heating the chamber in a manner that minimizes distortion of the cast portion to a temperature in the range of 1950°F to 2050°F, holding the temperature in that range for a period of time sufficient to solution all the delta phase precipitates, and then cooling the article to room temperature in a manner that minimizes distortion of the article. After solution heat treatment, the wrought portion of the engine part can be removed and replaced and the engine article can be reprocessed.